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theshuttle

A Publication of the University of Massachusetts Lowell

Future Scientists, Engineers Learn to Communicate, Mentor

Forget the jokes about pocket protectors, tongue-tied engineers and mad scientists.

With the help of a five-year, $2.4 million grant from the National Science Foundation and an innovative project plan, UMass Lowell graduate students in science and engineering will learn how to communicate with diverse audiences. The project, GK-12: Vibes and Waves in Action, connects graduate-level researchers to high-school teachers and students in school districts of Lowell and Lawrence.

"The NSF Division of Graduate Education is interested in improving the skills of prospective scientists and engineers, so they can better communicate and collaborate in a variety of settings, including the K-12 community," says Prof. Kavitha Chandra of the Electrical and Computer Engineering Department and principal investigator. "We expect our participating fellows to discuss their own research projects, build experiments for the classroom, and become mentors and role models to students."

▲ Co-directors of the $2.4 million NSF grant are, from left, Assoc. Prof. Fred Martin, Dr. Judith Boccia, Prof. Charles Thompson, Prof. Kavitha Chandra and Assoc. Prof. Xuejun Lu.

The project theme is the science, technology, engineering and mathematics (STEM) of sound and electromagnetic vibrations and waves, and their interaction with the environment. This relates well to core high school physics and mathematics curricula.

"Working with acoustics, optics and radio wave communications makes the theoretical learning come alive for the students and teachers," says Chandra. Developing a cyber infrastructure will be part of the project, both for the science learning involved and to promote social networking among the participants.

Each year of the project, eight graduate students already engaged in thesis-directed research will be recruited as GK-12 Fellows, drawing from all the engineering departments and computer science, mathematics

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Where to Find Jobs in a Slumping Economy

Medical Technologists in Strong Demand

The United States is producing about 5,000 medical laboratory technologists a year but needs 10,000-15,000.

One of the reasons for the shortage is low awareness of the profession. Seventy-six percent of those responding to a recent industry survey said they heard about the career option only after leaving high school.

"Many people are unaware of the important role that lab professionals play because they work behind the scenes," says SHE Interim Dean Kay Doyle. "They are the critical link in helping doctors make accurate diagnoses, yet the profession is often overlooked as a career."

Medical technologists, also known as clinical laboratory scientists, perform laboratory tests using sophisticated, state-of-the-art instrumentation. The results account for 75 to 80 percent of the information that doctors rely on to make diagnoses and prognoses, and to prescribe treatment. Technologists conduct dozens to hundreds of patient tests per day depending upon the laboratory department they work in.

"It's so important to have properly educated personnel performing these essential tests," says Doyle. "The impact they have on patient health care is enormous."

The American Society for Clinical Pathology (ASCP) and other groups are launching active recruitment campaigns. Massachusetts hospitals and independent medical reference laboratories are raising visibility of the profession with open houses and informational campaigns.

In addition to low awareness, other reasons for the shortage include the increasing number of aging baby boomers who need care, the closing of educational programs due to hospital mergers,

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Millipore and UMass Lowell Dedicate New Process Development Laboratory

Billerica Company Donates $225,000 Worth of Equipment and Services

Millipore Corporation (www.millipore.com), in partnership with UMass Lowell, inaugurated the Millipore Corporation Process Development Laboratory on April 9 in the Engineering Building on the North Campus.

A leading life science company that provides technologies, tools and services for bioscience research and biopharmaceutical manufacturing, Millipore donated more than $225,000 in equipment and services to the laboratory, which will be used for downstream purification research as well as training for students and industry professionals. The lab's advanced equipment includes clarification, chromatography, ultrafiltration/diafiltration systems and disposable mixing systems.

▲▲Chancellor Marty Meehan, left; Robert Shaw (hidden), Millipore's program director of vaccines and emerging biotechnology; Jean-Paul Mangeolle, president of Millipore's Bioprocess Division; and Prof. Carl Lawton, head of the Massachusetts BioManufacturing Center at UMass Lowell, cut the lab's ceremonial ribbon.

Jean-Paul Mangeolle, president of Millipore's Bioprocess Division headquartered in Billerica, and

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Healey and Public Service Grant Winners Announced

Fourteen projects by University faculty members have been chosen for funding under the Joseph P. Healey Endowment Grants program which supports research and scholarly activities that enhance the quality of academic and intellectual life at the University. For the first time, funding from the Healey Grants was combined with internal research and scholarship grants from the Provost's office. The combined grant process is expected to continue, with a common call for proposals. This year, proposals were separated into different categories and reviewed by panels representative of specific disciplines. The Public Service Awards were reviewed by a panel within the Academic Affairs office.

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Future Scientists, Engineers Learn to Communicate, Mentor

and physics. The fellows receive $30,000 for the year and commit to an intensive program of training, classroom observations and orientation. During the school year, the fellows will spend 10 hours a week each in the classroom, working with 12 participating high school math and physics teachers. Besides teaching and talking about their own research, the fellows will guide high school students in doing research projects of their own.

"The projected outcomes are students who become researchers, scientists and policy-makers with understanding of and engagement with the community. If academics, they will become better professors," says Dr. Judith Boccia, director of the Office of School Partnerships and a co-PI. "On the high school side, the teachers gain professional learning in new scientific issues and research. Instructional quality is improved and more real."

An 18-month prototype project, directed by Chandra, contributed to a better understanding of the issues and the ultimate success of the grant proposal to NSF. Chandra is joined by co-PIs Boccia, Prof. Charles Thompson and Assoc. Prof. Xuejun Lu of the Electrical and Computer Engineering Department, and Assoc. Prof. Fred Martin of the Computer Science Department.

Industry partners — Raytheon, MathWorks and MIT Lincoln Labs — will provide resources and professional guidance to the project, and a mentor network for the students.

—SS

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Millipore and UMass Lowell Dedicate New Process Development Laboratory

Chancellor Marty Meehan attended the dedication. A number of industry-leading organizations were also on hand to mark the event and to support the Massachusetts BioManufacturing Center at UMass Lowell.

"This UMass Lowell-Millipore partnership is the perfect example of the value both institutions bring to the regional economy," said Meehan. "Millipore's donation will allow us to train our students on state-of-the-art equipment they will use in their future — or current — jobs. Together, UMass Lowell and Millipore are helping to grow the life sciences workforce."

"Millipore strives to be at the forefront of innovation," said Mangeolle. "Given the dynamic nature of our industry, access to cutting-edge technology and solutions is critical. By partnering with higher education institutions such as UMass Lowell, we further our own knowledge while supporting the local community and helping to educate students who will one day enter the workforce."

The Millipore Corporation Process Development Laboratory is adjacent to, and works in tandem with, the recently outfitted IPS-Wyeth-Dakota Systems BioManufacturing Pilot Plant. Both are part of the Massachusetts BioManufacturing Center at UMass Lowell, an interdisciplinary research, development and education initiative supported by the University of Massachusetts and the Commonwealth. It assists biotechnology companies in developing procedures leading to industry-compliant manufacturing processes.

—EA

Prof. Doyle Wins Excellence in Education Award

▲▲**The American Society for Clinical Pathology (ASCP) has awarded Prof. Kay Doyle, left, the Excellence in Education Award for her continued dedication to laboratory science education. Lynn Chakkpahak, center, is chairperson of the ASCP Laboratory Professionals Council. Pat Knebel, right, was named the winner of the ASCP National Leadership in Management Award. Doyle also was elected to a third term on the American Society for Clinical Pathology (ASCP) Board of Registry Board of Governors. With more than 130,000 members, the Society is the oldest, largest, and most respected professional organization for laboratory medicine in the world.**

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Where to Find Jobs in a Slumping Economy

and retiring clinical lab professionals. "Multiple factors make it a solid career choice for people interested in pursuing the clinical lab path," says Doyle.

Graduates from clinical lab science programs are employed not only by hospitals but also by biomedical device, biotechnology and pharmaceutical companies, as well as veterinary medical laboratories and university and medical center research laboratories.

UMass Lowell offers a Clinical Laboratory Sciences B.S. degree with two options — Medical Technology and Clinical Sciences. In 2006, the Clinical Laboratory and Nutritional Sciences Department launched the Graduate Certificate in Public Health Laboratory Sciences, the first graduate public health laboratory sciences program in the country. It was established in response to the risk of emerging infectious diseases, pandemics, and biological and chemical threats.

▲▲**Kay Doyle**

"This career offers many interesting possibilities, which is good news especially these days with daily headlines of job cuts," says Doyle.

—KA

Dylan and Baez in Lowell This Summer

This year's Lowell Summer Music Series re-unites folk music icons Dylan and Baez. Well, sort of. Joan Baez brings her activist songs and legendary voice to the park on Thursday, July 30. The recipient of the Grammy's 2007 Lifetime Achievement Award, Baez toured with Bob Dylan in the early sixties. She recorded her first solo album in 1960; her latest, "Day After Tomorrow," came out last year.

Jakob Dylan and the Wallflowers arrive on Friday, Aug.14, with a music legend's name and an old-fashioned American rock and roll sound. One might think the elder Dylan is their primary inspiration, but this talented, Grammy Award winning band's influence comes from the likes of Robbie Robertson, Bruce Springsteen and Tom Petty.

Other shows include Los Lobos, June 27; Michael Franti & Spearhead, July 17; Eileen Ivers and Immigrant Soul, Aug. 21; and Tom Rush, Sept. 5. For the full series schedule and ticket information go to www.lowellsummermusic.org.

▲**Jakob Dylan and the Wallflowers are one of the acts coming to the Lowell Summer Music Series.**

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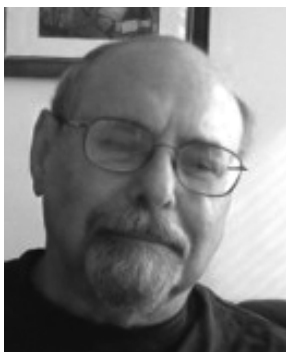
Prof. Fred Lewis Named President of the New England Political Science Association

On Saturday, May 9, Political Science Prof. Fred Lewis will be named president of the New England Political Science Association (NEPSA), the region's leading professional organization for the study of political science, at the group's annual meeting in Portland, Maine.

"I am tremendously honored — both personally and professionally — to have been chosen for this office," says Lewis. "I have been active in the organization for many years, and am proud to join former presidents from the region's leading universities — including Harvard, Williams, Brown and Boston College — in leading this distinguished fine group of political scientists. This selection not only honors me, it also recognizes our program and department."



▲ Fred Lewis

At its annual meeting, NEPSA typically attracts more than 200 faculty members and graduate students from the region and beyond.

Lewis has been a faculty member at UMass Lowell and its predecessor institutions for more than three decades. He was chair of the Political Science Department, and is the author of "The Context of Judicial Activism: The Endurance of the Warren Court Legacy in a Conservative Age."

Nano Summit Highlights UMass Lowell Strengths

UMass Lowell leadership was on display at the annual Nanomanufacturing Summit in April, where recent developments and breakthrough research were showcased. More than 30 faculty members and as many graduate students are engaged in nano-related research through the Nanomanufacturing Center, so poster presentations filled the Suffolk Conference Center at the Wannalancit Mill for the edification of industry partners and community members.

U.S. Rep. Nicki Tsongas gave the keynote address, introduced by Chancellor Marty Meehan. UMass Lowell is a national leader in nanotechnology development and, earlier this year, Tsongas helped to secure a $1 million federal appropriation to support the University's ongoing research into detection of biological and chemical threats.

"You are playing a revolutionary role in developing a technology for the future," said Tsongas. "In so doing you should be mindful of your work's potential shelf life. All we have to do is think of the University's historic dominance in plastics engineering and the textile industry — technologies developed years ago that still spark new innovation and important business opportunities. What you are doing today will play itself out for decades to come."

▲ U.S. Rep. Nicki Tsongas gave the keynote address at the Nanomanufacturing Summit, where recent developments and breakthrough research were showcased.

Summit workshops covered such topics as safety considerations with nanoparticles and advanced sensors for chemical and biological threats or structural damage. These were presented by Asst. Prof. Dhimiter Bello of the Work Environment Department, Assoc. Prof. James Whitten of the Chemistry Department and Assoc. Prof. Christopher Niezrecki of the Mechanical Engineering Department.

Plastics Engineering Prof. Carol Barry, a director of the Nanomanufacturing Center, spoke about nanomaterial development and nanomanufacturing capabilities at UMass Lowell. Dr. George Kachen, the Center's director of research and technology, discussed research partnerships and collaborations. About 50 companies were represented at the event.

Cleaning Products May Pose Health Risks in Hospitals

Study Warns of Possible Respiratory and Skin Problems

A new study indicates that cleaning products meant to protect health could actually cause harm. A recent Work Environment study carried out in six hospitals found that cleaning products contain complex chemical concoctions that, when used in closed spaces, put workers, staff, and possibly patients, at risk.

"We found that inhalation exposures were higher when several cleaning tasks were performed together in a small space, such as a bathroom," says Prof. Margaret Quinn.

The research project led by former Work Environment doctoral student Anila Bello began in response to complaints from hospital clinicians and other employees about asthma-like symptoms and skin irritations following the use of cleaning products.

▲ Former Work Environment doctoral student Anila Bello, center, led a research project that analyzed toxic chemicals in cleaning products used in hospitals. Work Environment Profs. Margaret Quinn and Donald Milton co-authored an article with Bello about the study results that appeared in the March issue of the Environmental Health journal.

"We've found that clinicians and other employees are at risk due to an increase in the use of cleaning products," says Bello, who is now a post-doctoral fellow at the Harvard School of Public Health. "We wanted to determine not only the source of the exposure but also the cleaning methods that lead to, or reduce, exposure to the toxins so that solutions to the problem could be found."

The researchers identified different chemical classes such as glycol ethers, alcohols, amines and acids that have a very wide range of volatilities and other chemical properties. They examined common tasks such as floor finishing and the cleaning of floors, mirrors, toilet bowls and counters and found that the method used to clean contributed to the risk of exposure. For example, spraying produced more inhalation exposure than simply wiping. The study also showed that the airborne exposure from cleaning products used in small, poorly ventilated rooms such as small exam rooms, lingered from 20 minutes to more than an hour, thus affecting all who used the room.

"When it comes to cleaning products, most people think that more is better but this is not the case — either for surface cleaning or for infection control," says Quinn who is also director of the Sustainable Hospitals Program in the Lowell Center for Sustainable Production. "There is a need for infection control and prevention specialists to work closely with environmental cleaning services so that the goals of both can be met. These products are complex mixtures of chemicals, some of which can have toxic effects on humans."

The study funded by the National Institute for Occupational Safety and Health and a seed grant from Harvard University School of Public Health was published in the March issue of the journal Environmental Health.

National Chiao Tung University in Taiwan and UMass Lowell Sign Cooperation Agreement

Prof. of Work Environment Michael Ellenbecker, center, and Postdoctoral Researcher Candace Tsai, present a cooperation agreement with President Wu, left, of the National Chiao Tung University in Taiwan. The agreement, signed by UMass Lowell Provost Ahmed Abdelal, commits the two universities to working cooperatively in both teaching and research, with the potential of developing joint degree programs.

The signing ceremony occurred during Ellenbecker and Tsai's recent visit to Taiwan, where they presented their research on the evaluation and control of worker exposure to nanoparticles at a workshop and national conference.

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Healey and Public Service Grant Winners Announced

This year's funding totaled $65,100, or between $3,000 and $5,000 per proposal.

The Healey/Research/Scholarship Grants

Todd Avery, English **Study to be Funded:** Avery will write two books: the first, titled "Minding the Gap: The Two Cultures, 1818-2009" will examine the idea of "two cultures" (the relationship between humanistic and scientific discourse,) while "The Early Strachey: Beauty, Goodness, God and the Origins of Bloomsbury Modernism" will examine the work of Lytton Strachey.

Maria Brunette, Work Environment **Study to be Funded:** Brunette will examine the factors that promote or hinder the academic success of Hispanic females in engineering, including examination of the individual, institutional and societal factors.

Danielle Day, Physical Therapy **Study to be Funded:** Day will study microdialysis, which allows for the collection and analysis of hormones directly released from human and animal muscle and fat tissue, including projects that relate to pain and inflammation, and factors from fat tissue that relate to appetite and metabolism.

Deane Falcone, Biological Sciences **Study to be Funded:** Falcone will investigate altered metabolism in plants to understand precisely how altered metabolism signals or "informs" plants to switch to enhanced growing while under stress.

Monica Galizzi, Economics **Study to be Funded:** Galizzi will examine the long-term economic outcomes of occupational injuries with specific attention to the effect on children of injured workers.

Ivy Ho, Psychology **Study to be Funded:** Ho will study sexual harassment among Asian female students at UMass Lowell and Middlesex Community College by examining the relationships between sexual harassment, physical and psychological wellbeing, and acculturation.

Rick Hochberg, Biological Sciences **Study to be Funded:** Hochberg will use DNA barcoding to determine if two symbiotic oligochaete worms (similar to earthworms) are different species. While both animals are nearly identical in appearance, and both have been known for over 150 years, no one has been able to conclusively determine if they are separate biological species.

John Kaag, Philosophy **Study to be Funded:** Kaag will write a book about the women philosophers who contributed to the American philosophical tradition in the Boston-Lowell area between 1875 and 1930. The book will closely examine the work of Ella Lyman Cabot, and her emphasis on ethics and education.

William Kaizen, Art **Study to be Funded:** Kaizen will complete research for his book, "The Immediate; Video Art and Media Populism, from the 1960s to 9/11," by traveling to New York, Pittsburgh, Chicago and Los Angeles.

Alexander Kheifets, Math **Study to be Funded:** Kheifets will study spectral and scattering problems for differential and finite difference operators, specifically for Jacobi and CMV operators. He hopes to identify new classes of uniqueness for the inverse scattering problem.

Xiaobai Li, Operations & Information Systems **Study to be Funded:** Li will examine data mining, information privacy and information economics. His data mining technologies help organizations extract useful information, and are popular tools in customer relationship management, medical diagnostics, fraud detection and counter terrorism.

David Lustick and Jill Lohmeier, Education **Study to be Funded:** Lustick and Lohmeier will examine the practicality of implementing a science learning campaign on the platforms and cars of the MBTA, called T-Riders' Education about Carbon Footprints (TREC).

Anthony Szczesiul, English **Study to be Funded:** Szczesiul will complete his book "The Myth of Southern Hospitality: Discourse, Ethics, and Politics"—the first full length book about the cultural myth of southern hospitality and how the oft-repeated story has been adapted over two centuries.

Steven Tello and Yi Yang, Management **Study to be Funded:** Tello and Yang will study the value of the network relationships established among inventors, university researchers, venture capitalists and others as they participate in commercial activities associated with the M2D2 technology incubator.

In addition to the Healey Grants, the University of Massachusetts Lowell Public Service Grants were also announced. Projects are selected by an administrative committee for their ability to enhance the University's public service mission. This year's awards totaled more than $18,000.

Diana Archibald, English
John Dufffy, Mechanical Engineering **Study to be Funded:** Archibald and Duffy will create a new service learning program involving University writing and engineering students who will partner with a tribal college in Arizona to develop culturally appropriate housing for remote areas of the reservation. The goal is to help humanize technologists, and help humanists become more technologically literate.

MinJeong Kim, Education
Vera Ossen, Education **Study to be Funded:** Kim and Ossen will conduct a pilot study on improving literacy in homeless shelters.

Ainat Koren and Susan Reece, Nursing
and Linda Kahn-D'Angelo, Physical Therapy **Study to be Funded:** The team will develop an educational program to inform health care professionals and parents about the importance of placing newborn infants on their stomachs several times a day, under supervision.

Deirdra Murphy, Physical Therapy
Ashleigh Hillier, Psychology **Study to be Funded:** Murphy will develop an interdisciplinary physical activity and relaxation program for underserved youth with autism spectrum disorders in the greater Lowell area.

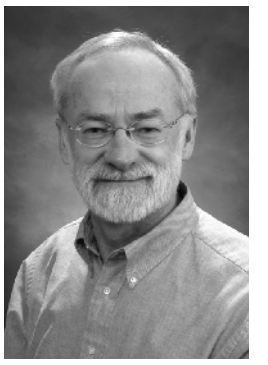
Solar Drip Irrigation to Benefit Farmers in Developing Countries

Project Promotes Sustainable Use of Water and Energy

The world's total population right now stands at 6.8 billion, according to the U.S. Census Bureau. To sustain this many people well into the future, 60 percent of the extra food required must come from irrigated agriculture. Seventy-five percent of the world's irrigated area is in developing countries, where small-scale rural farmers cultivate more than half of this agricultural land.

▲ Carolina Barreto

The common irrigation practice is to flood the field with seasonal water or from gravity-fed systems or diesel/gasoline-powered pumps. Carolina Barreto, a doctoral student in the University's solar energy engineering program, along with Mechanical Engineering Prof. John Duffy, have come up with a low-cost, highly efficient drip-irrigation system that doesn't rely on fossil fuel to power the pump. Their project recently received a $46,839 grant from the National Collegiate Inventors & Innovators Alliance.



▲ John Duffy

"The aim of this project is to provide farmers in developing countries with an affordable, eco-friendly and easy irrigation method that promotes the sustainable use of water and energy," says Duffy.

The solar drip-irrigation system uses an inexpensive, low-pressure 12-volt diaphragm pump that is hooked up to a 250-watt photovoltaic array. "Solar-powered pumps are clean, efficient and require low maintenance," he says. A prototype of the system was installed in January 2008 in Turripampa, Peru, which enjoys abundant sunshine throughout the year.

Barreto says water delivery per unit area, using drip lines at the plants' root level, is 40 percent more efficient than traditional irrigation furrows since less water is lost due to evaporation and seepage in sandy soils. Liquid fertilizer could also be applied to the field through the drip lines, reducing labor costs and weed growth. "Depending on the crop cycle, drip irrigation could allow up to three harvests per year instead of one in the rainy season, generating enough income to quickly pay for the system," she says.

This project is sustained as part of UMass Lowell's decade-old Village Empowerment program with indigenous Peruvian farmers.

Charles Carroll Steps Down as Dean of Fine Arts, Humanities and Social Sciences

Dr. Charles Carroll, who has served as dean of UMass Lowell's Division of Fine Arts, Humanities and Social Sciences since 2002, is stepping down from that post and is planning to take a sabbatical in the next fiscal year.

Prof. Nina Coppens, chair of the Psychology Department, will serve as interim dean until the search process for a permanent successor is completed.

Chancellor Marty Meehan says, "Dean Carroll has been an outstanding steward of the University. He is highly regarded among his colleagues for his trustworthiness, integrity and intelligence and for his careful management of resources. He has been a champion for the students and faculty in the division and they have been served well by his leadership."

Carroll taught in the History Department for 37 years, serving as chair for 15 years.

▲ Charles Carroll

Under Carroll's administration, faculty members in the division increased from just over 100 to the current 130, and majors in the day school and Continuing Education increased to over 4,000. New academic programs created included a master's degree in Sound Recording Technology with state-of-the-arts facilities. Dean Carroll provided leadership for developing online and blended programs, including the master's degree in Criminal Justice, and the award-winning certificate in Behavioral Intervention in Autism. Two endowed scholarship funds were established during his tenure.

Carroll received his doctorate in American and European History from Brown University and is a specialist in early American history, Lowell industrial history and the history of technology.

UMass Lowell, Optomec and Brewer Science Win European R&D Award

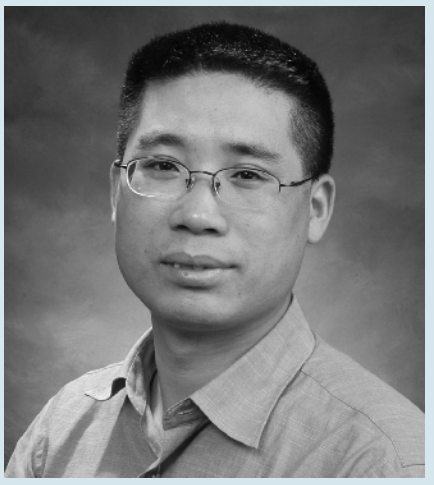
Researchers Cited for Work in Printed Flexible Electronics

UMass Lowell, Optomec and Brewer Science have won the IDTechEx Academic R&D Award for Printed Electronics. The award recognizes the most significant, innovative research in the printed electronics industry over the past year.

Assoc. Prof. Xuejun Lu of the University's Electrical and Computer Engineering Department led the work, which demonstrated the ability to print thin-film transistors (TFTs) with operating frequencies exceeding 5 gigahertz. The TFTs are built from single-walled carbon nanotube ink from Brewer Science and printed using Optomec's Aerosol Jet deposition system. The results of this project were recently published in the journal Applied Physics Letters.

"It's a collaborative research," says Lu. "I appreciate Brewer Science and Optomec's efforts in this research. It's an interesting and promising area with potential commercial applications in radio frequency IDs and conformal electronics. We are continuing our work in this field."

"The development of a 5 GHz all-printed flexible electronic circuit is a notable breakthrough and one that will help push forward the printed electronics industry," says Radhu Das, the CEO of IDTechEx, which is a leading provider of independent global research and analysis on the development and application of printed electronics. About 760 people from 31 countries attended IDTechEx's annual conference and award ceremony held April 7 in Dresden, Germany.



▲ Xuejun Lu

On hand to receive the award on behalf of the University was ECE Department chair Prof. Craig Armiento. "UMass Lowell's development of the flexible transistor is significant because it is a high-performance device that can be manufactured at extremely low cost using inkjet printers on flexible substrates. In addition, these flexible transistors can be fabricated at near-room temperature and without the need for expensive clean rooms. These cost advantages offer the potential for disposable electronics in many applications," he says.

According to Armiento, these printable transistors can also be integrated with organic LEDs (flexible displays), sensors, solar cells, electronic paper and wearable electronics. "The flexible transistor offers opportunities for new applications in the medical, telecommunications and consumer electronics industries," he says. "In fact, the printed electronics industry is projected to grow to a $57 billion market in the next 10 years!"

▲ Prof. Craig Armiento, left, receives the 2009 IDTechEx Printed Electronics Europe Award for Academic R&D in April in Dresden, Germany. Joining him were, from left, Ulrich Herleb of Brewer Science, IDTechEx chair Dr. Peter Harrop and Optomec CEO Dave Ramahi.

College of Management Partners to Offer 'StreetwiseMBA' Program

InnerCity Entrepreneurs Brings Successful Training Course for Business Owners to Campus

When an entrepreneur is running a business, there's rarely an opportunity to take a step back and think strategically. But a new program being offered in cooperation with the College of Management is helping small-business owners do just that.

The College is the new site for the InnerCity Entrepreneurs' "StreetwiseMBA" certificate program, designed to give owners of established local businesses the chance to develop a growth plan for their operation through classroom instruction, expert advice and networking.

"Entrepreneurs are often running their business by the seat of their pants," says Kay Paine, director of programs for InnerCity Entrepreneurs. "What this program really allows the entrepreneurs to do is build on all of the things they have learned from running their business by the seat of their pants and run it in a more thoughtful, strategic manner, really thinking long-term as well as about short-term needs."

The overall goal of the program is for students to develop a growth plan for the next three years, says Ashwin Mehta, who teaches business strategy, corporate entrepreneurship and global enterprise in the College of Management and leads the InnerCity Entrepreneurs class. "It's a very specific, action-oriented growth plan: the funding needed, the marketing program, and how the actions will be put in place."

While InnerCity Entrepreneurs has been around since 2004 — the nonprofit has a contract with the U.S. Small Business Administration to offer training — this is the first time the organization has offered a course at UMass Lowell. The program has been running at locations in Boston and Worcester, and work began last year to find a site in Lowell to host classes, according to Beecher Grogan, Merrimack Valley program manager.

Paine says through the help of partners in the city — including Theresa Park of the Economic Development Department and the Lowell Small Business Assistance Center — she connected with Kathryn Carter, dean of the College of Management. Carter has been an important supporter of the program, say Paine, Mehta and Grogan.

Nine entrepreneurs are in this first round, which started in March and ends in November. Over that period, they will meet in 15 classroom sessions and take part in special events like meeting as a mentoring group and networking with professionals in key areas like marketing and finance, according to Grogan.

While many programs are aimed at fledgling entrepreneurs trying to get businesses off the ground, this course is for well-established operations with at least $250,000 in revenue, says Mehta.

"They are here to really learn how they can take their business to the next level," Mehta says. "They may be at a certain level where they are not able to grow (on their own) and need help to manage that growth."

Registration is already under way for the next round of the program, which will run next year. For more information, check out www.innercityenterpreneurs.org.

Treasurer Tim Cahill Wants to Be Governor – Someday

State Official Offers Candid Comments to Undergraduates

▲ Massachusetts Treasurer Tim Cahill told students in Assoc. Prof. Jeffrey Gerson's State and Local Politics class that he would like to be governor someday, and that he might run soon. Cahill was the final on-campus guest speaker in Gerson's class this semester. Cahill, center, is joined by Gerson, second from right, and students from the class.

Unleashing the Power of Regenerative Medicine

Braunhut Lecture Highlights Re-Growing Fingers and Limbs in Lab

The images were no less than dramatic: large open wounds on the ear and back of laboratory mice closed up and healed completely in a matter of weeks after a single treatment. Even more astonishing were photos of the hand of a 67-year-old male model-airplane hobbyist whose index finger was partially cut off in a propeller accident and had grown back just eight weeks after treatment.

These are just some of the exciting results highlighted by Biological Sciences Prof. Susan Braunhut in her first University Professor Lecture, "To Grow Back a Lost Human Limb: The Challenges and Promise of Regenerative Medicine," held April 29.

In her talk, Braunhut discussed the mechanics of wound healing and how her research team uses chemicals and agents to produce a "blastema," a mass of unspecialized progenitor stem cells from which new tissue develops at the amputation site.

"In adult mammals, the usual way to heal wounds is to form a scar," she said. "Scar tissue provides a barrier to prevent infection and dehydration, but it doesn't function the same way as the original tissue. Our ultimate goal to re-grow a digit or limb that is not only anatomically identical to the original, that is, complete with bone, muscle, cartilage, nerves, soft tissue, nail, skin and hair, but also fully functional."

Braunhut told her packed audience at Alumni Hall that potential applications of this regeneration technique include patients with disfiguration due to surgery, loss of limbs or digits caused by accidents or trauma from military combat, amputations due to underlying disease such as diabetes or gangrene, and patients with spinal cord or burn injuries.

"Hopefully, this could also help solve the problem of shortage of organs for transplant, such as the kidney, heart, lung and liver," she said.

Braunhut's research was supported by a two-and-a-half-year, $1.5 million grant from the Defense Advanced Research Projects Agency (DARPA). The agency was interested in potentially applying the technique to soldiers with limb injuries sustained in Iraq and Afghanistan.

Braunhut also described the "biodome," a small, plastic thimble-like device with a watertight sleeve that allows an amputation site to be stimulated for tissue growth by immersing it in various solutions, including amniotic fluid.

To learn more about her work, visit www.uml.edu/research_labs/susanbraunhut.

▲ University Professor Susan Braunhut, center, recently shared the results of her research with students, faculty and staff. Braunhut is shown before the talk with, from left, Vice Provost Don Pierson, Chancellor Marty Meehan, Executive Vice Chancellor Jacqueline Moloney and Provost Ahmed Abdelal.

Byrne Testifies on Prisoner Re-Entry Before House Appropriations Committee

In testimony delivered before the U.S. House Appropriations Committee, Criminal Justice Prof. James Byrne presented detailed insights on the effective design, implementation and evaluation of prisoner re-entry programs. First, Byrne described the challenges of identifying which efforts work in combating prisoner re-entry without sufficient, quality evaluation research.

"The 'gold standard' for evidence-based research mandates that at least two randomized field experiments be conducted on a program or strategy before its value can be properly assessed," says Byrne. "There simply have not been enough experiments conducted on prisoner re-entry to make informed decisions on program effectiveness."

In addition to calling for more randomized field experiments, Byrne presented the committee with recommendations to improve research and create more effective prisoner re-entry programs. Byrne's testimony called for better analysis of existing pre-entry prisoner research and the need for increased, evidence-based review of research on the effectiveness of incarceration, probation and other sanctions/intermediate sanctions (e.g. supervision, electronic monitoring and boot camps) as compared to other punishments.

"As it stands now, there is no methodologically rigorous evidence that incarceration reduces an offender's risk of re-offending," he says. "In fact, it appears that when compared to similar groups of offenders with non-prison sanctions, the prisoners re-offend at a higher rate."

Byrne also discussed the small —but significant—positive effects of prison treatment support programs, and called for further investigation into the effectiveness of probation and parole.

▲ Prof. James Byrne

"While probation is the sanction of choice in this country, there are very few quality studies that provide information on its effectiveness. We know that probation and parole programs are not as effective as they were 30 years ago, we just don't know why, because the necessary research has not been done."

Finally, Byrne recommends considering new ways of funding re-entry programs to link the acceptance of federal program development money to the performance of external, independent evaluations of program implementation and effectiveness.

"If funding required grantees to allow independent, external evaluations of program implementation and impact, we would all gain significant insight into what works, and what doesn't."

To view Byrne's complete testimony, search the House Subcommittee on Commerce, Justice, Science and Related Agencies webpage, appropriations.house.gov/Subcommittees/sub_cjs.shtml.

Meet Honorary Degree Recipients on Commencement Eve

Meet this year's honorary degree recipients and the distinguished alumni award winner at the Commencement Eve Celebration on Friday, May 29, at Allen House. Tickets are $100 each. Thanks to sponsorships, all money raised from ticket sales will go directly to the UMass Lowell Scholars Fund, which provides tuition and other financial aid to UMass Lowell students.

The honorary degree recipients are: Bernard Amadei, founder of Engineers without Borders; George Duncan, chairman of Enterprise Bank; Chaz Maviyane-Davies, a professor and artist whose posters make powerful visual statements on social issues; and Robert Pozen, chairman of MFS Investments. Kathleen Beaumont Allen '77, former chief financial officer of Millipore Corporation, will be honored as the distinguished alumna.

Student award winners will also be recognized. These include winners of the Chancellor's Medal for Student Service and the Chancellor's Medal for Distinguished Academic Achievement from each of the colleges. The winner of the University Scholar-Athlete Award — the varsity athlete with the best academic record — will also be honored.

The Commencement Eve Celebration includes an elegant reception at Allen House, starting at 5 p.m. To purchase tickets, visit www.uml.edu/commencementeve2009 or call Elaine Dalton at 978-934-3236.

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